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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,513	05/23/2001	Edward Waltz	ERIM-45702/03	9882
25006	7590	08/13/2004	EXAMINER	
GIFFORD, KRASS, GROH, SPRINKLE ANDERSON & CITKOWSKI, PC 280 N OLD WOODARD AVE SUITE 400 BIRMINGHAM, MI 48009			CHANG, SUNRAY	
			ART UNIT	PAPER NUMBER
			2121	
DATE MAILED: 08/13/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/863,513

Applicant(s)

WALTZ ET AL.

Examiner

Sunray Chang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Claims 1 – 23 are presented for examination.

Claims 1 – 23 are rejected.

**Claim Objections**

2. **Claim 4 is objected to** because of the following informalities: According to the limitation of claim 4, “the step of training the text search detector”, claim 4 should be one dependent claim depending on independent claim 1. Claim 4 should be added “The method of claim 1” to show it is depending on independent claim 1. Appropriate correction is required.

3. **Claim 14 is objected to** because of the following informalities: Claim 14 depending on claim 14 itself is not appropriate. According to the limitation of claim 14 “criteria for declaring an approximate correlation between two the records, A and B”. Claim 14 should depend on claim 13. Appropriate correction is required.

**Claim Rejections - 35 USC § 112**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1 – 17 are rejected under 35 U.S.C. 112, second paragraph;** there is insufficient antecedent basis for this limitation in the claim.

5. **As to claim 1 – 17**, there is insufficient antecedent basis for this limitation in the claim. For example, applicants recite the limitation “the event” of claim 1 [line 6 and line 9]; claim 15 [line 1] is not previously cited.

6. **As to dependent claim 11**, applicants recite the limitation "wherein the target within the image" in first line of claim 11. There is insufficient antecedent basis for this limitation in the claim. The “the target within the image”, in first line of claim 11, is not previously cited.

7. **As to dependent claim 13 and 14**, applicants recite the limitation "wherein criteria for declaring an approximate correlation between two the records, A and B" in line 1 – 2 of claim 13. There is insufficient antecedent basis for this limitation in the claim. The “criteria”, in first line of claim 13 and 14, is not previously cited.

8. **As to dependent claim 16**, applicants recite the limitation "object" in first line of claims 16 and 22. There is insufficient antecedent basis for this limitation in the claim. The “object”, in first line of claim 16, is not previously cited.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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9. **Claims 1 – 6, 11, and 15 – 23 are rejected under 35 U.S.C. 102(b)** as being anticipated by Richard L. Delanoy (U.S. Patent No. 5,793,888, and referred to as Delanoy hereinafter).

10. **Regarding independent claim 1**, Delanoy teaches, a method of correlating text and imagery [recognize patterns of spectral or textural features in imagery, Abstract, Line 1 – 2], steps of specifying a target concept [setting forth a user-desired image subject, Col. 3, Line 10]; providing textual material and imagery [various attributes, Col. 3, Line 11]; training [determining, Col. 3, Line 12] a text search detector to examine [processor means, Col. 3, Line 12] the textual material for text regions [various attributes, Col. 3, Line 13] which relate to the target concept [user-desired, Col. 3, Line 10], and creating a text target detection record [attributes, Col. 3, Line 14] in a database A [subset, Col. 3, Line 13] in the event of a match or other meaningful association [most discriminating, Col. 3, Line 14 – 15]; training a discriminating feature detector [functional template member, Col. 3, Line 15] to search for locations [providing a functional template, Col. 3, Line 16] within the imagery which relate to the target concept [for each discriminating attributes, Col. 3, Line 17], and creating a location target detection record in a database B [functional template, Col. 3, Line 16] in the event of a match or other meaningful association [based on scoring functions, Col. 3, Line 17]; and comparing [matching, Col. 3, Line 20] the records in both databases [subset, Col. 3, Line 13 and functional template, Col. 3, Line 16] to declare an approximate correlation [extract user desired images, Col. 3, Line 20 – 21, if any, indicative of a common target concept [employs the functional template in a matching routine, Col. 3, Line 19 – 20].

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11. **Regarding dependent claims 2 and 20**, Delanoy teaches, the target concept is an event or object [image subject, Col. 3, Line 10].
12. **Regarding dependent claim 3**, Delanoy teaches, the discriminating features [data source, Col. 5, Line 16] within the imagery include infrared, multispectral or spatial features [multispectral, Col. 5, Line 16].
13. **Regarding dependent claim 4**, Delanoy teaches, the steps: a) defining a search phrase [attributes of the subject, Col. 5, Line 2]; b) testing the phrase against a validation set [supervised learning session, Col. 5, Line 4], and c) repeating a) and b) until all relevant targets in the validation set are detected [continuously provide feedback to each other, Col. 5, Line 5 – 6].
14. **Regarding dependent claim 5**, Delanoy teaches, the examination of the textual material [determines various attributes, Col. 3, Line 13] includes searching the text regions [user desired image subject, Col. 4, Line 11 – 12] for geographic location text associated with the target concept [an object, geographical area, geometrical shape, Col. 4, Line 12 – 13].
15. **Regarding dependent claim 6**, Delanoy teaches, generating a concept identifier code [agent, Col. 3, Line 19] in both the text and image target detection records [attributes, Col. 3, Line 11 and functional template, Col. 3, Line 15] using a lookup table in the event of a match or other meaningful association [matching routing, Col. 3, Line 21].

16. **Regarding dependent claim 11**, Delanoy teaches, target within the image [spatial properties, Col. 8, Line 40] is in the form of a pixel index [each pixel an index, Col. 8, Line 39].

17. **Regarding dependent claims 15 and 21**, Delanoy teaches, the event may be characterized as an emergency, tragedy, disaster or crisis [the user inputs information about the data and the nature of the object or region to be sought, Col. 5, Line 7 – 8].

18. **Regarding dependent claims 16 and 22**, Delanoy teaches, the object [image, Col. 4, Line 66] involves an environmental asset, structure, or mode of transportation [containing some subject, object or region, or subimage, Col. 4, Line 65 – 67].

19. **Regarding dependent claim 17**, Delanoy teaches, steps associated with examining [supporting program revises, Col. 5, Line 51] the textual material or searching for locations within the imagery [model of user intensions, Col. 5, Line 51 – 52] are earned out in a batch mode or as part of a recursive flow [the process repeats until the user is satisfied with the agent's performance, Col. 5, Line 52 – 54].

20. **Regarding independent claim 18**, Delanoy teaches, a text and imagery spatial correlator [an interest image is a spatial map of evidence, Col. 6, Line 54], a document text parsing and interpretation engine [detection algorithm, Col. 7, Line 3] which uses a context-based [data fusion, Col. 7, Line 6] search to generate topical information [provide a means of representing information for human interpretation, Col. 7, Line 6 – 7]; an imagery engine operative



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[functional template correlation, Col. 7, Line 11, 30] to associate [consists, Col. 7, Line 31] the components of an image [subimage, Col. 7, Line 32] with known spatial features and generate location information [input image values, Col. 7, Line 35]; and a matching subsystem [autocorrelation, Col. 7, Line 17] operative to associate [matching, Col. 7, Line 19] the topical information [kernel K, Col. 7, Line 19] with the location information [pixel location, Col. 7, Line 20] and present a result to a user [output, Col. 7, Line 18].

21. **Regarding dependent claim 19**, Delanoy teaches, text parsing and interpretation engine [a set of simple feature detectors, Col. 7, Line 4] includes a user-trainable agent [detection algorithm, Col. 7, Line 3] to define the context of interest in a current search [provide a means of representing information for human interpretation, Col. 7, Line 6 – 7].

22. **Regarding dependent claim 23**, Delanoy teaches, the matching subsystem [supporting program, Col. 5, Line 50] is operative to associate the topical information [user's intention, Col. 5, Line 50] with the location information in a batch mode or as part of a recursive flow [the process repeats until the user is satisfied with the agent's performance, Col. 5, Line 52 – 54].

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

23. **Claims 7 – 10, 12, and 13 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Delanoy, and in view of Margaret E. Elliott (U.S. PG PUB 2002/0156779, and referred to as Elliott hereinafter).

(Delanoy as set forth above generally discloses the basic inventions.)

24. **Regarding dependent claim 7**, Delanoy teaches the searching of the test regions [various attributes, Col. 3, Line 13].

Delanoy does not teach accomplished by reference to a Gazetteer of place names and their corresponding lat-long locations.

Elliott teaches accomplished by reference to a Gazetteer of place names [gazetteer, 0031, Line 5] and their corresponding lat-long locations [longitude/latitude coordinates, 0022, Line 5].

It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Delanoy to include "accomplished by reference to a Gazetteer of place names and their corresponding lat-long locations" for the purpose of indexing information against a database of spatial language which is used in combination with a modified search engine that conducts searches using spatially relevant criteria and spatial analysis algorithms Alpha-numeric values from a mathematical system are used for identifying spatial locations, and can be arbitrary, geocentric, virtual, and galactic.

25. **Regarding dependent claim 8**, Delanoy teaches the text target detection record [attributes, Col. 3, Line 14].

Delanoy does not teach a text document ID number, an index to locate a paragraph or passage within the document, the target concept identifier code (CIC), and the latitude-longitude (LL) value.

Elliott teaches a text document ID number [Identifier information, 0021, Line 3], an index to locate a paragraph or passage within the document [attribute information, 0021, Line 7], the target concept identifier code (CIC) [identifier code, 0021, Line 8], and the latitude-longitude (LL) value [longitude/latitude coordinates, 0022, Line 5].

It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Delanoy to include "a text document ID number,

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an index to locate a paragraph or passage within the document, the target concept identifier code (CIC), and the latitude-longitude (LL) value” for the purpose of indexing information against a database of spatial language which is used in combination with a modified search engine that conducts searches using spatially relevant criteria and spatial analysis algorithms Alpha-numeric values from a mathematical system are used for identifying spatial locations, and can be arbitrary, geocentric, virtual, and galactic.

26. **Regarding dependent claim 9**, Delanoy teaches the search for locations within the imagery [providing a functional template, Col. 3, Line 16].

Delanoy does not teach extracting a lat-long location.

Elliott teaches extracting a lat-long location [longitude/latitude coordinates, 0022, Line 5].

It would have been obvious to a person of ordinary skill in the art at the time of applicant’s invention to modify the teaching of Delanoy to include “extracting a lat-long location” for the purpose of indexing information against a database of spatial language which is used in combination with a modified search engine that conducts searches using spatially relevant criteria and spatial analysis algorithms Alpha-numeric values from a mathematical system are used for identifying spatial locations, and can be arbitrary, geocentric, virtual, and galactic.

27. **Regarding dependent claim 10**, Delanoy teaches the location target detection record [functional template, Col. 3, Line 16].

Delanoy does not teach an image ID number, an index to locate the target within the image, the target concept identifier code (CIC), and the latitude-longitude (LL) value.

Elliott teaches an image ID number [Identifier information, 0021, Line 3], an index to locate the target within the image [attribute information, 0021, Line 7], the target concept identifier code (CIC) [identifier code, 0021, Line 8], and the latitude-longitude (LL) value [longitude/latitude coordinates, 0022, Line 5].

It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Delanoy to include "an image ID number, an index to locate the target within the image, the target concept identifier code (CIC), and the latitude-longitude (LL) value" for the purpose of indexing information against a database of spatial language which is used in combination with a modified search engine that conducts searches using spatially relevant criteria and spatial analysis algorithms Alpha-numeric values from a mathematical system are used for identifying spatial locations, and can be arbitrary, geocentric, virtual, and galactic.

28. **Regarding dependent claim 12**, Delanoy teaches the searching of the test regions [determining, Col. 3, Line 12]; and the text target detection record [attributes, Col. 3, Line 14].

Delanoy does not teach reference to a Gazetteer of place names and their corresponding lat-long locations; and the text target detection record contains: a text document ID number, an index to locate a paragraph or passage within the document, the target concept identifier code (CIC), and the latitude-longitude (LL) value.

Elliott teaches reference to a Gazetteer of place names [gazetteer, 0031, Line 5] and their corresponding lat-long locations [longitude/latitude coordinates, 0022, Line 5]; and the text target detection record contains: a text document ID number [Identifier information, 0021, Line 3], an index to locate a paragraph or passage within the document [attribute information, 0021, Line 7], the target concept identifier code (CIC) [identifier code, 0021, Line 8], and the latitude-longitude (LL) value [longitude/latitude coordinates, 0022, Line 5].

It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Delanoy to include "reference to a Gazetteer of place names and their corresponding lat-long locations; and a text document ID number, an index to locate a paragraph or passage within the document, the target concept identifier code (CIC), and the latitude-longitude (LL) value" for the purpose of indexing information against a database of spatial language which is used in combination with a modified search engine that conducts searches using spatially relevant criteria and spatial analysis algorithms Alpha-numeric values from a mathematical system are used for identifying spatial locations, and can be arbitrary, geocentric, virtual, and galactic.

29. **Regarding dependent claim 13**, Delanoy teaches a method of correlating text and imagery [recognize patterns of spectral or textural features in imagery, Abstract, Line 1 – 2]

Delanoy does not teach IF CIC in record A = CIC in record B, THEN record A and record B are associated.

Elliott teaches a pattern of characters with wildcards, can represent different string combinations which have the same meaning. This allows the spider to check if a particular string matches a given regular expression or if a given regular expression matches a particular string [0068, Line 11 – 15].

It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Delanoy to include "IF CIC in record A = CIC in record B, THEN record A and record B are associated" for the purpose of indexing information against a database of spatial language which is used in combination with a modified search engine that conducts searches using spatially relevant criteria and spatial analysis algorithms. Alpha-numeric values from a mathematical system are used for identifying spatial locations, and can be arbitrary, geocentric, virtual, and galactic.

30. **Regarding dependent claim 14**, Delanoy teaches a method of correlating text and imagery [recognize patterns of spectral or textural features in imagery, Abstract, Line 1 – 2]

Delanoy does not teach IF (LL) in record A is within S of (LL) in record B, THEN record A and record B are associated. Where S is a user-selectable spatial distance.

Elliott teaches IF (LL) in record A is within S of (LL) in record B, THEN record A and record B are associated. Where S is a user-selectable spatial distance. [A spatial search engine searches the spatial index to that index of words or the spatial columns of data in that index of words to find matches in a radius distance from a geographic coordinate, Col. 2, 0015, Line 2 – 5]

It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Delanoy to include "IF (LL) in record A is within S of (LL) in record B, THEN record A and record B are associated. Where S is a user-selectable spatial distance" for the purpose of indexing information against a database of spatial language which is used in combination with a modified search engine that conducts searches using spatially relevant criteria and spatial analysis algorithms Alpha-numeric values from a mathematical system are used for identifying spatial locations, and can be arbitrary, geocentric, virtual, and galactic.



**Conclusion**

31. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shunji Matsumoto et al. (U.S. Patent No. 5,638,460) disclose inputting image using fuzzy logic, receiving user input string, selecting keywords, calculating correlation factors. Richard L. Delanoy et al. (U.S. Patent No. 5,222,155) disclose image point value, template point value, scoring function, fuzzy template shape matching. Mario Marco Degasperri (U.S. Patent No. 4,075,604) discloses real time image recognition, comparison with sample images,
32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sunray Chang whose telephone number is 703-305-8744. The examiner can normally be reached on M-F 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (703)308-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-746-3506.

Sunray Chang  
Patent Examiner  
Group Art Unit 2121  
Technology Center 2100  
U.S. Patent and Trademark Office  
  
August 4, 2004

*Ramesh Patel*  
RAMESH PATEL  
PRIMARY EXAMINER 8/6/04  
*For Anthony Knight*